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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/683,817

10/10/2003

Jordi Ferran

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01/13/2006

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EXAMINER

WILLIAMS, HOWARD L

ART UNIT

PAPER NUMBER

2819

DATE MAILED: 01/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/683,817	<b>Applicant(s)</b> FERRAN ET AL.	
	<b>Examiner</b> Howard L. Williams	<b>Art Unit</b> 2819	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 December 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

Claims 1-5, 7-10, 14-18, 34, and 35 are rejected under 35 U.S.C. 102(b) as anticipated by Ohno et al. (US 5565864 A). Ohno et al. describes a position encoder which detects a plurality of encoder marks to form a pattern. Ohno uses a limited number of these patterns as absolute position signals and also determines relative position from the detected markings that are “non-transformable” in the language of Ohno’s description, i.e. incremental. The incremental marks drive the counter in conjunction with the clocking signal and provide a count of relative position from a recognized absolute position mark. Ohno et al. summarize these features in column 2, lines 9-30:

According to the first aspect of the invention, solving the above problems, there is provided an absolute encoder comprising a code plate formed with an absolute pattern having a plurality of bit patterns, each bit pattern consisting of a predetermined number of bits and representing one absolute position; detecting means relatively moving to said code plate, having a plurality of detecting elements opposed to a bit pattern of said predetermined number of bits, and reading said absolute pattern to output a bit pattern signal; absolute position transforming means which can transform, among a plurality of bit pattern signals corresponding to the plurality of bit patterns, only specific bit pattern signals corresponding to specific bit patterns into absolute positions; pattern signal changing means for successively changing the bit pattern signals until the bit pattern signal read by the detecting means coincides with one of the specific bit pattern signals transformable by the absolute position transforming means; and calculating means for calculating information on a position of said code plate relative to said detecting means, based on the transformable bit pattern signal and a number of changes effected by said pattern signal changing means

Applicants' argument filed 02 December 2005 has been fully considered but is not persuasive. The response urges that Ohno does not disclose an analyzer that produces "an incremental-position-change and an index signal". In support of this strained contention the response singles out signal line 6-4. Signal line 6-4 in figure 3 of Ohno is high or low to indicate the detected situation of a non-transformable pattern however this internal signal is clearly not the only signal in the Ohno circuit. Signal line 6-5 is one candidate, this signal indicates that sensor has registered a "transformable signal" or an absolute position mark. Thus signal line 6-5, which would be in an opposite state to line 6-4, when taken together with signal line 6-4 show that Ohno provides both "an incremental-position-change signal and an index signal". Additionally Ohno discloses in column 6 about line 20

subtraction circuit 9.  
20 Receiving the absolute position information a=11 from the ROM 7 and the relative position information k=4 from the counter, the subtraction circuit 9 calculates  $a-k=7$ , finally obtaining an absolute position corresponding to the detected data 10111.

The conjunction indicates another way in which Ohno anticipates the claim as it clearly indicates an incremental-position-change signal (Ohno's relative position information) and an index signal (Ohno's absolute position information).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

Claims 6, 11-13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno et al. (US 5565864 A). Ohno et al. mention angular position determination but not linear ; a person of ordinary skill in the art would have known that position encoders are readily adapted between linear and angular measurements and would have been obvious. Ohno also does not explicitly state that the encoder marks are equidistantly spaced or identical. However, in a device that determines relative position regularity between the marks, i.e. equidistant spacing, would be the norm and would have been obvious because 1) Ohno does not disclose irregular markings, and 2) equal spacing of the marks for relative position would have improved the accuracy.

Claims 20-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno et al. (US 5565864 A) in view of Donahue et al. (US 6,155,669).


Ohno et al. limit their discussion to the position encoder and do not delve into the myriad number of applications for position encoding, the likes of which include fire control for tanks to printers. Donahue et al. disclose a page width printer with plural print stations for the respective colors where each print station includes its own code reader. It would have been obvious to provide Donahue with an Ohno et al. type position encoder because it would provide the reliable print position control described by Donahue and reduction in memory requirements as disclosed by Ohno, which would be particularly beneficial where each print station is provided with its own position determination.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Howard L. Williams at telephone number 571.272.1815. The Patent and Trademark Office central facsimile number for application specific correspondence intended for entry is 571-273-8300.

1/11/06  
Voice: (571) 272-1815

  
Howard L. Williams  
Primary Examiner  
Art Unit 2819